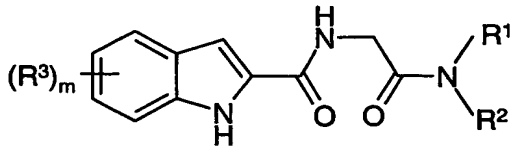
Claims

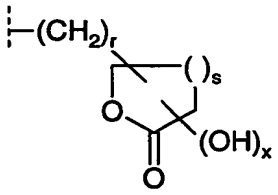
1. A compound of formula (1):



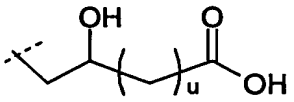
(1)

wherein:

R^1 is independently selected from C_{1-6}alkyl, C_{5-7}cycloalkyl, C_{5-7}cycloalkylC_{1-3}alkyl, C_{1-6}alkoxy, C_{5-7}cycloalkoxy, C_{5-7}cycloalkylC_{1-3}alkoxy, heterocyclyl, heterocyclylC_{1-3}alkyl, heterocyclyloxy or heterocyclylC_{1-3}alkoxy (wherein each of these groups is substituted on carbon by 1, 2 or 3 hydroxy groups, provided that there is no more than one hydroxy group on the same carbon atom and a ring carbon atom adjacent to a ring heteroatom is not substituted by a hydroxy group) and groups of the formula A or A':



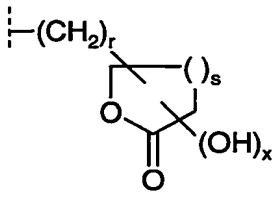
(A)



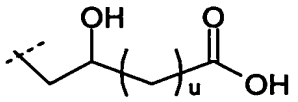
(A')

wherein x is 0 or 1, r is 0, 1, 2 or 3, s is 1 or 2 and u is 1 or 2; provided that in (A) the hydroxy group is not a substituent on the ring carbon adjacent to the ring oxygen;

R^2 is phenyl or heteroaryl (each of which is optionally substituted by 1 or 2 substituents independently selected from halo, cyano, trifluoromethyl, difluoromethyl, fluoromethyl, C_{1-3}alkoxy, C_{1-3}alkanoyl, carbamoyl, *N*-C_{1-3}alkylcarbamoyl, *N,N*-di-C_{1-3}alkylcarbamoyl, sulfamoyl, *N*-C_{1-3}alkylsulfamoyl, *N,N*-di-C_{1-3}alkylsulfamoyl and groups of the formulae B and B':



(B)



(B')

wherein x is 0 or 1, r is 0, 1, 2 or 3, s is 1 or 2 and u is 1 or 2; provided that the hydroxy group is not a substituent on the ring carbon adjacent to the ring oxygen);

m is 0, 1 or 2;

R^3 is independently selected from hydrogen, halo, nitro, cyano, hydroxy, carboxy, carbamoyl, C_{1-4}alkyl, C_{2-4}alkenyl, C_{2-4}alkynyl, C_{1-4}alkoxy, C_{1-4}alkanoyl, fluoromethyl, difluoromethyl, trifluoromethyl and trifluoromethoxy;

provided that when R^1 is of the formula A or A' then R^2 does not contain a group of the formula B or B' and when R^2 is of the formula B or B' then R^1 does not contain a group of the formula A or A';

or a pharmaceutically acceptable salt or prodrug thereof.

2. A compound of the formula (1) as claimed in claim 1, wherein:

R^1 is selected from C_{1-6}alkyl, C_{5-7}cycloalkyl, C_{5-7}cycloalkylmethyl, C_{1-6}alkoxy, C_{5-7}cycloalkoxy, C_{5-7}cycloalkylC_{1-3}methoxy, heterocyclyl, heterocyclylmethyl, heterocyclyloxy and heterocyclylmethoxy (wherein each of these groups is substituted by 1 or 2 hydroxy groups provided that there is no more than one hydroxy group on the same carbon atom) or R^1 is of the formula A or A';

R^2 is a phenyl or heteroaryl group (each of which is optionally substituted by 1 or 2 substituents independently selected from halo, cyano, trifluoromethyl, carbamoyl, N-C_{1-3}alkylcarbamoyl, N,N-di-C_{1-3}alkylcarbamoyl, sulfamoyl, N-C_{1-3}alkylsulfamoyl, N,N-di-C_{1-3}alkylsulfamoyl, a group of the formula B and a group of the formula B');

or a pharmaceutically-acceptable salt or in-vivo hydrolysable ester thereof.

3. A compound of the formula (1) as claimed in claim 1, wherein:

R^1 is selected from C_{1-6}alkyl, C_{5-7}cycloalkyl, C_{5-7}cycloalkylmethyl, C_{1-6}alkoxy, C_{5-7}cycloalkoxy and C_{5-7}cycloalkylC_{1-3}methoxy, (each group is substituted by 1 or 2 hydroxy groups provided that there is no more than one hydroxy group on the same carbon atom);

R^2 is a phenyl or heteroaryl group (each of which is optionally substituted by 1 or 2 substituents independently selected from halo, cyano, trifluoromethyl, carbamoyl, N-C_{1-3}alkylcarbamoyl, N,N-di-C_{1-3}alkylcarbamoyl, sulfamoyl, N-C_{1-3}alkylsulfamoyl and N,N-di-C_{1-3}alkylsulfamoyl);

or a pharmaceutically-acceptable salt or in-vivo hydrolysable ester thereof.

4. A compound of the formula (1) as claimed in claim 1,wherein:

R^1 is selected from ethyl, propyl, cyclopentyl, cyclohexyl, cyclopentylmethyl and cyclohexylmethyl (wherein each group is substituted by 1 or 2 hydroxy groups provided that there is no more than one hydroxy group on the same carbon atom);

R^2 is selected from phenyl, pyridyl, oxadiazolyl, oxazolyl, thiazolyl and thienyl (each of which group is optionally substituted by 1 or 2 substituents independently selected from halo, cyano, trifluoromethyl, carbamoyl, N-C_{1-3}alkylcarbamoyl, sulfamoyl and N-C_{1-3}alkylsulfamoyl);

m is 1; and

R^3 is chloro;

or a pharmaceutically-acceptable salt or in-vivo hydrolysable ester thereof.

5. A compound of the formula (1) as claimed in claim 1 wherein:

R^1 is selected from 2-hydroxyethyl, 2,3-dihydroxypropyl, 3,4-dihydroxycyclopentyl and 3,4-dihydroxycyclopentylmethyl;

R^2 is phenyl optionally substituted by 1 or 2 substituents independently selected from halo, cyano, trifluoromethyl, carbamoyl, N-C_{1-3}alkylcarbamoyl, sulfamoyl and N-C_{1-3}alkylsulfamoyl;

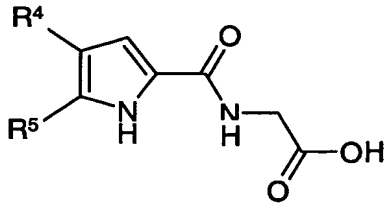
m is 1 or 2; and

R^3 is hydrogen or halo;

or a pharmaceutically-acceptable salt or in-vivo hydrolysable ester thereof.

6. A process for preparing a compound of formula (1), as defined in claim 1 or a pharmaceutically-acceptable salt or an *in vivo* hydrolysable ester thereof which process comprises:

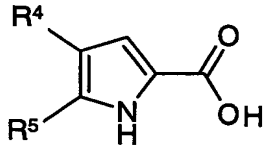
a) reacting an acid of the formula (2):



(2)

or an activated derivative thereof; with an amine of formula (3): HNR^1R^2 or

b) reacting an acid of the formula (4):



(4)

or an activated derivative thereof; with an amine of formula (5): $H_2NCH_2CONR^1R^2$:

wherein R^1, R^2, R^4 and R^5 are, unless otherwise specified, as defined in claim 1;

wherein any functional groups are optionally protected;

and thereafter if necessary:

i) converting a compound of the formula (1) into another compound of the formula (1);

ii) removing any protecting groups;

iii) forming a pharmaceutically acceptable salt or *in vivo* hydrolysable ester.

7. A pharmaceutical composition comprising a compound of the formula (1) as claimed in any one of claims 1 to 5 or a pharmaceutically-acceptable salt or *in vivo* hydrolysable ester thereof and a pharmaceutically-acceptable diluent or carrier.

8. A compound of the formula (1) as claimed in any one of claims 1 to 5, or a pharmaceutically acceptable salt or *in vivo* hydrolysable ester thereof, for use as a medicament.

9. The use of a compound of the formula (1), or a pharmaceutically acceptable salt or *in vivo* hydrolysable ester thereof, as claimed in any one of claims 1 to 5, in the manufacture of a medicament for use in the treatment of type 2 diabetes, insulin resistance, syndrome X, hyperinsulinaemia, hyperglucagonaemia, cardiac ischaemia or obesity in a warm-blooded animal.

10. A compound of the formula (1), or a pharmaceutically acceptable salt or *in vivo* hydrolysable ester thereof, as claimed in any one of claims 1 to 5, for use as a medicament in the treatment of type 2 diabetes, insulin resistance, syndrome X, hyperinsulinaemia, hyperglucagonaemia, cardiac ischaemia or obesity in a warm-blooded animal such as man.

11. A compound of the formula (1), or a pharmaceutically acceptable salt or *in vivo* hydrolysable ester thereof, as claimed in any one of claims 1 to 5, in the manufacture of a medicament for use in the treatment of type 2 diabetes, insulin resistance, syndrome X, hyperinsulinaemia, hyperglucagonaemia, cardiac ischaemia or obesity in a warm-blooded animal such as man.

12. A method of treating type 2 diabetes, insulin resistance, syndrome X, hyperinsulinaemia, hyperglucagonaemia, cardiac ischaemia or obesity in a warm-blooded animal, such as man, in need of such treatment which comprises administering to said animal an effective amount of a compound of formula (1) as claimed in any one of claims 1 to 5.

13. A method of treating type 2 diabetes in a warm-blooded animal, such as man, in need of such treatment which comprises administering to said animal an effective amount of a compound of formula (1) as claimed in any one of claims 1 to 5.